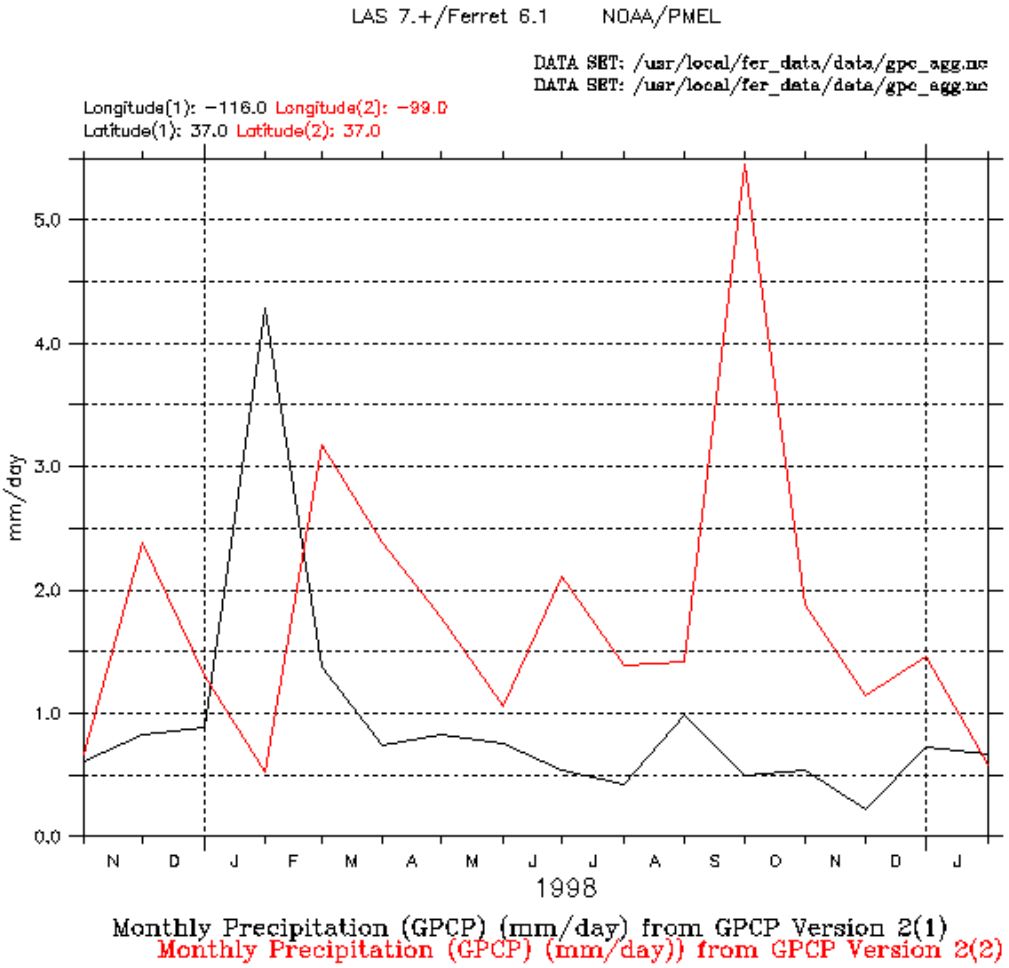
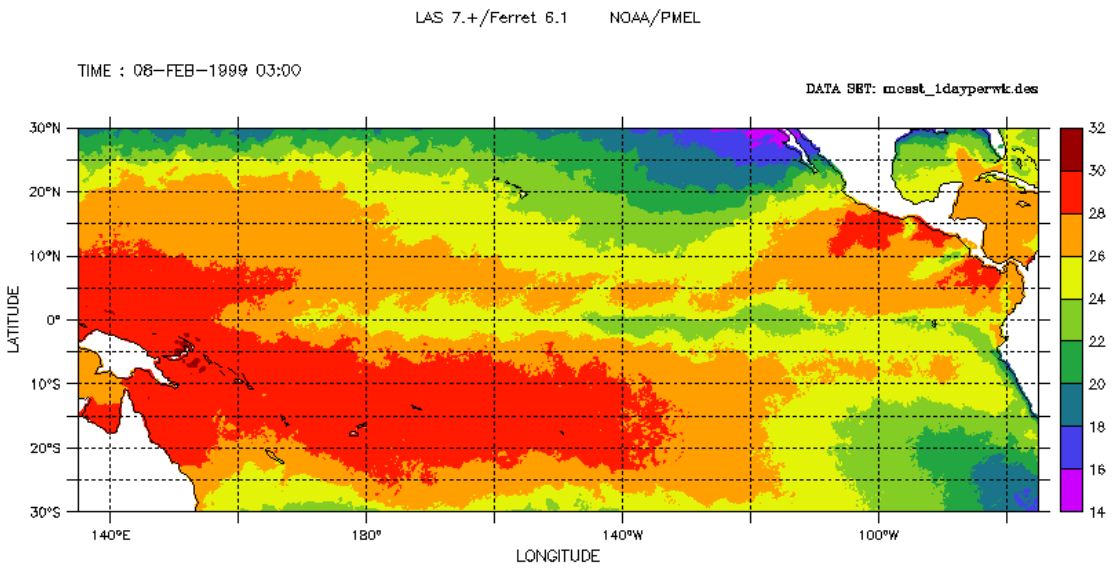
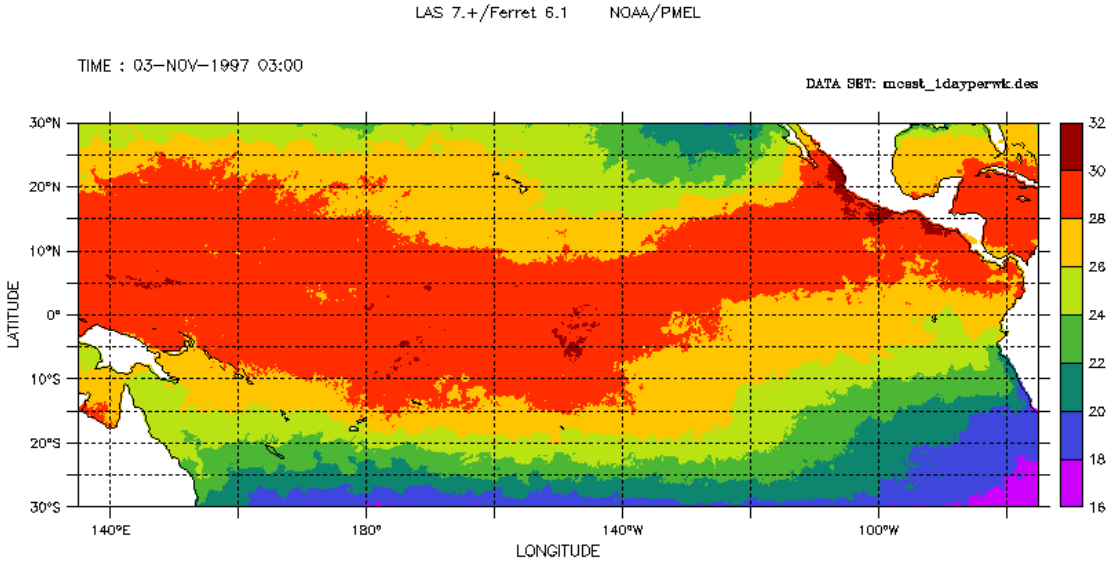
Lesson 63: Comparing the Effects of El Nino and La Nina





Weekly Sea Surface Temperature (MCSST) (degC)



Weekly Sea Surface Temperature (MCSST) (degC)

Questions:

1. Analyze the sea surface temperature maps. Which one is the El Nino phase and which one is the La Nina phase?

El Nino would be in November, because there is more warm water, which as stated in the background is one of the first signs of ENSO.

2. Write a paragraph comparing and contrasting the sea surface temperature maps.

Students should be able to read the temperature using the legend and compare and contrasts differences in the two graphs. Students should notice that the warm water is concentrated more in Africa (on the west side of the image) and in November it is spread across the ocean, reaching the North and South American shoreline and bringing with it the rainfall associated with El Nino phenomenon.

3. Analyze the line graph showing precipitation comparisons. Which line is California? Which line is Kansas?

In the graph above, California is the black line and Kansas is shown in red.

4. Compare and contrast both sites and write a paragraph on your observations. Relate the observations to the ENSO phases.

Students should notice that Kansas has a higher percentage of precipitation, with several larger periods of rain and a maximum amount occurring in October. California has much less precipitation year-round, but experiences a high percentage of precipitation in the winter months (near January).

5. In which location would you rather live based on the precipitation amounts? Why?

Students can choose either location as long as they justify it correctly. If choosing California, students should say they would prefer California for the lower amounts of precipitation overall. If students choose Kansas they should say they prefer more precipitation or justify it in some way using correct data from the chart.

Extensions:

1. How do you think any future climate change will affect the El Nino and La Nina phenomenon?

One possible answer is if global warming continues on this pattern, raising temperatures, El Nino and La Nina will become even more powerful. Warmer waters will create more precipitation and have a stronger affect as they move around the globe, causing more intense phenomenon globally.

2. What information would you need to make this prediction?

To make a fully educated guess students would need to look into the different opinions on how the climate will change and then students should see how these things affect El Nino and La Nina. For example, what affect does temperature have on this phenomenon?

3. How do you think this will affect the two comparison sites?